

NASA PROPAGATION INFORMATION CENTER

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Introduction

The NASA Propagation Information Center is a modest enterprise funded by NASA and is built around two semi-retired men: Professor Emeritus Warren Flock and Professor Adjunct Ernie Smith. It is congenially located in the Department of Electrical and Computer Engineering of the University of Colorado. Warren and Ernie both enjoy their association with the NASA Propagation Program to which they were previously connected. Flock is the author of the Earth-space Propagation Handbook for frequencies below 10 GHz, and Smith was JPL RTOP manager of the program. Both charge 14% of their time to the program which they spend on items clearly appropriate to the program, e.g. Flock on a Quarterly Newsletter and Smith on support of program management. Additional activities give visibility to and provide publicity for the program and help train graduate students in propagation. Lisa Leonard, research assistant, supports the program in a secretarial capacity, while Zhang Zengjun, a visiting scholar, assists in computer aspects. The Information Center became operational in July 1988.

The Center aims to be several things: a communications medium with the outside world, a mechanism for internal communication within the NASA Propagation Program and an aid to its management. To justify its position in the ECE Department it also offers graduate instruction in propagation and serves on thesis committees. Boulder has an illustrious history in radio wave propagation but it now lacks focus for the subject, at least with respect to communications. The Center attempts to provide this focus.

The impetus for the Center derives, in part, from recommendations of the NASA Science Review Panel in 1986, such as: increased cooperation with other organizations, enhanced monitoring of outside activities, harmonizing acquisition/processing standards, continued CCIR activities, continued handbook support, and continued NAPEX meetings.

Recent Activity

The Center has certain items of regular activity that have gone on since its inception. For example the Center has produced eight quarterly newsletters with an increased demand for each successive edition (Warren Flock, editor.), supported preparations for NAPEX XIV and for the ACTS Propagation Workshops (E. K. Smith), and maintains mailing lists for various Propagation Program distributions (Lisa Leonard). Items of a more general nature which are felt to be in the general interests of the Propagation Program include

- serving as Associate Editor for Propagation for the IEEE Antennas and Propagation Magazine (E. K. Smith since November 1989).

- During the Fall 1989 Term one of us (Ernie Smith) taught a first year graduate course with Dr. Kenneth Davies of NOAA on Fundamentals of Propagation, and in Spring Term 1990 (Ernie Smith again) taught Earth-Space Propagation with Dr. David Hogg, a course pioneered at the University of Colorado by Warren Flock. There were 16 students in each course.

- At the invitation of Dr. H. Kikuchi, chairman of URSI Commission E, Ernie Smith is serving as co-convener of two sessions at the URSI General Assembly in Prague in August 1990. At the urging of the US URSI Commission E chairman, Emil Soderberg, Ernie Smith has submitted his candidacy for international vice chairman of Commission E.

- Both Warren and Ernie continue to serve on the IEEE Wave Propagation Standards Committee where Warren continues as Mini-Review Editor.

- The Center is active in US-CCIR Study Groups 5 and 6 and is accorded special status by the two US chairmen, Dr. John Cavanagh (USSG 5) and Dr. Charles Rush (USSG 6) in that

preparatory document distribution is made to the Center to the same degree normally afforded subgroup chairmen.

- Foreign travel took Ernie Smith to Japan in August/September 1989 for the International Symposium on Antennas and Propagation (ISAP'89) and the URSI Symposium on Environmental and Space Electromagnetic, both held in Tokyo. During this trip he also visited the Advanced Telecommunications Research Laboratories (ATR) in Kyoto, the Communications Research Laboratories (CRL) in Kokubunji and its Radio Wave Observatory in Wakkannai. During the Japan leg of the journey he gave five lectures, one in each symposium, one at ARC, and one at Wakkannai. The fifth was a public lecture in downtown Tokyo sponsored by the International Satellite Communication Society, Dr. Kenichi Miya President. He then traveled on his own in September 1989 to spend 12 days in China at the invitation of three organizations there: The Office of Spectrum Management in Beijing, the China Research Institute of Radiowave Propagation in Xinxian, Hebei, and Xidian University in Xi'an. Warren Flock attended the AGARD Meeting in Copenhagen on Atmospheric Propagation in the UV, Visible, IR and MM-Wave Region and Related Aspects in October 1989. These trips were reported on in the AP-S Antennas and Propagation Magazine.

Foreign visitors to the Propagation Information Center included Prof. Fan Changxin of Xidian University in November 1989 (during which time an inter-university agreement was consummated), Dr Kiyoshi Igarashi from CRL Tokyo in April 1990, and Prof Lin Deyun of Tsinghua University in May 1990.